

Meeting: 1005, Newark, Delaware, SS 8A, Special Session on Mathematical Biology

1005-92-19 **David A Edwards*** (edwards@math.udel.edu), Department of Mathematical Sciences,
University of Delaware, Newark, DE 19716-2553. *The Effect of Flow Penetration in the BIAcore.*

The BIAcore is an ingenious device that allows the measurement of rate constants for binding processes without disturbing the system. However, accurate mathematical models are needed to interpret the raw data correctly. In order to explain anomalous experiments, it has been proposed that the bulk channel flow penetrates into the reacting receptor gel layer. This talk will discuss these effects. By using asymptotics and perturbation methods, simple expressions may be obtained which are valid for a wide range of experimental parameters. These solutions, which provide corrections to the rate constants measured in the BIAcore, are interpreted physically. (Received December 30, 2004)